Borrelia recurrentis の性状と回帰熱ボレリア、ライム病関連ボレリア、その他ボレリア種との比較

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Borrelia recurrentis Characterization and Comparison with Relapsing-Fever, Lyme-Associated, and Other *Borrelia* spp.

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ABSTRACT *Borrelia recurrentis*, the cause of louse-borne relapsing fever, has until recently been considered noncultivable, which has prevented characterization of this spirochete. We successfully cultivated 18 strains from patients with louse-borne relapsing fever and present the initial characterization of these isolates. Electon microscopy revealed spirochetal cells with pointed ends, an average wavelength of 1.8 μm, an amplitude of 0.8 μm, and 8 to 10 periplasmic flagella. The G+C ratio was 28.4 mol%. Whole DNA-DNA hybridizations showed similarity between the isolates of *B. recurrentis* but not with *Borrelia hermsii*, *Borrelia parkeri*, *Borrelia turicatae*, or the Lyme-associated borreliae. Sequencing studies of both the flagellin and 16S rRNA genes revealed that the greatest similarity was between *B. recurrentis* and *Borrelia duttonii*. Analysis of the sodium dodecyl sulfate-polyacrylamide gel electrophoresis profiles of strains revealed four groups based on the position of a major protein band (one of the groups showed some heterogeneity and was subdivided into four subgroups). Pulsed-field gel electrophoresis revealed five distinct patterns.

抄録 シラミ媒介性回帰熱の起因菌である *Borrelia recurrentis* は、これまで培養が不

可能であったことからその性状はあまり知られていない。我々はシラミ媒介性回帰熱の患者から18株のボレリアの培養に成功し、これら分離株の性状について検討した。電子顕微鏡像、G+C含量、DNA相同性、鞭毛遺伝子あるいは16S rRNA遺伝子の塩基配列、SDS-PAGE、PFGEによる解析を行い、回帰熱ボレリア、ライム病関連ボレリア、その他ボレリア属に属する種との比較を行った。

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